

**WHAT IS CLAIMED IS:**

1. A gas fitting interlock apparatus comprising:  
a pedestal portion;  
a fitting support portion disposed on the pedestal portion;  
an interlock nut clamp configured to be fastened to the fitting support portion;  
and  
a fastener for fastening the interlock nut clamp to the fitting support portion,  
the fastener being capable of being tightened to a tightness equal to or  
greater than a predetermined tightness sufficient to clamp a gas line  
disposed between the interlock nut clamp and the pedestal portion.

2. The apparatus of claim 1, further comprising:  
a momentary switch disposed within the pedestal portion, wherein the  
momentary switch is  
closed when the fastener is tightened to a tightness equal to or greater  
than the predetermined tightness sufficient to clamp the gas line  
disposed between the interlock nut clamp and the pedestal  
portion and  
open when the fastener is not tightened to a tightness equal to or  
greater than the predetermined tightness sufficient to clamp the  
gas line disposed between the fitting support portion and the  
pedestal portion.

3. The apparatus of claim 2 further comprising:

a first circuit including

a first power source and

at least one indicator, wherein the at least one indicator is operably

coupled to the momentary switch and the first power source

such that the at least one indicator

presents an indication when the momentary switch is closed

and ~~LED~~ LED

does not present an indication when the momentary switch is

not closed; and

a second circuit including a second power source, wherein

the second circuit is operably coupled to the momentary switch and the

second power source such that the second circuit is

closed when the momentary switch is closed and

open when the second circuit is open and

the second circuit is capable of being operably coupled to circuitry of

equipment to which the gas fitting interlock apparatus is

capable of being operably coupled, such that when the

apparatus is operably coupled to the equipment and the second

circuit is operably coupled to the equipment circuitry, the

equipment is prevented from operating when the momentary

switch is open.

4. The apparatus of claim 3, wherein the at least one indicator is an at

least one light-emitting diode.

1           5.       The apparatus of claim 3, wherein the momentary switch includes  
2           a first contact by which the momentary switch is operably coupled to the at  
3                 least one indicator;  
4           a second contact by which the momentary switch is operably coupled to the  
5                 first circuit voltage source;  
6           a third contact by which the momentary switch is operably coupled to the  
7                 pedestal portion and the fitting support portion; and  
8           a fourth contact by which the momentary switch is operably coupled to an  
9                 input/output interlock return, wherein the input/output interlock return  
10                is operably coupled to the second circuit power source.

1           6.       An apparatus for atmosphere chemical vapor deposition, the apparatus  
2     comprising:  
3           a gas fitting interlock apparatus including  
4                 a pedestal portion;  
5                 a fitting support portion disposed on the pedestal portion;  
6                 an interlock nut clamp configured to be fastened to the fitting support  
7                        portion; and  
8                 a fastener for fastening the interlock nut clamp to the fitting support  
9                        portion, the fastener being capable of being tightened to a  
10                      tightness equal to or greater than a predetermined tightness  
11                      sufficient to clamp a gas line disposed between the interlock  
12                      nut clamp and the pedestal portion.

1           7.     The apparatus of claim 6, wherein the gas fitting interlock apparatus  
2 further includes  
3           a momentary switch disposed within the pedestal portion, wherein the  
4           momentary switch is  
5           closed when the fastener is tightened to a tightness equal to or greater  
6           than the predetermined tightness sufficient to clamp the gas line  
7           disposed between the interlock nut clamp and the pedestal  
8           portion and  
9           open when the fastener is not tightened to a tightness equal to or  
10          greater than the predetermined tightness sufficient to clamp the  
11          gas line disposed between the fitting support portion and the  
12          pedestal portion.

1           8.     The apparatus of claim 7, further comprising:  
2 a first circuit including  
3           a first power source and  
4           at least one indicator, wherein the at least one indicator is operably  
5           coupled to the momentary switch and the first power source  
6           such that the at least one indicator  
7           presents an indication when the momentary switch is closed  
8           and  
9           does not present an indication when the momentary switch is  
10          not closed; and  
11 a second circuit including a second power source, wherein  
12          the second circuit is operably coupled to the momentary switch and the  
13          second power source such that the second circuit is  
14          closed when the momentary switch is closed and  
15          open when the second circuit is open and  
16          the second circuit is capable of being operably coupled to circuitry of  
17          equipment to which the gas fitting interlock apparatus is  
18          capable of being operably coupled, such that when the  
19          apparatus is operably coupled to the equipment and the second



20 circuit is operably coupled to the equipment circuitry, the  
21 equipment is not capable of operating when the momentary  
22 switch is open.

1 9. The apparatus of claim 8, wherein the at least one indicator is an at  
2 least one light-emitting diode.

1 10. The apparatus of claim 8, wherein the momentary switch includes  
2 a first contact by which the momentary switch is operably coupled to the at  
3 least one indicator;  
4 a second contact by which the momentary switch is operably coupled to the  
5 first circuit voltage source;  
6 a third contact by which the momentary switch is operably coupled to the  
7 pedestal portion and the fitting support portion; and  
8 a fourth contact by which the momentary switch is operably coupled to an  
9 input/output interlock return, wherein the input/output interlock return  
10 is operably coupled to the second circuit power source.

1 11. A method for using a gas fitting connection, the method comprising:  
2 inserting a gas line into an interlock component for receiving the gas line, the  
3 interlock component including a momentary switch;  
4 tightening the interlock component to a tightness equal to or greater than a  
5 predetermined tightness sufficient to clamp the gas line, the tightness  
6 to which the interlock component is tightened enabling the momentary  
7 switch to close;  
8 presenting an indication when the momentary switch is closed; and  
9 preventing gas from flowing through the gas line when the momentary switch  
10 is open.

1 12. The method of claim 11, wherein the interlock component further  
2 includes  
3 a pedestal portion;  
4 a fitting support disposed on the pedestal portion;

5 an interlock nut clamp configured to be fastened to the fitting support portion;  
6 and  
7 a fastener for fastening the interlock nut clamp to the fitting support portion.

1 13. The method of claim 12, wherein the interlock component further  
2 includes  
3 a momentary switch disposed within the pedestal portion, wherein the  
4 momentary switch is  
5 closed when the fastener is tightened to a tightness equal to or greater  
6 than the predetermined tightness sufficient to clamp the gas line  
7 disposed between the interlock nut clamp and the pedestal  
8 portion and  
9 open when the fastener is not tightened to a tightness equal to or  
10 greater than the predetermined tightness sufficient to clamp the  
11 gas line disposed between the fitting support portion and the  
12 pedestal portion.

1 14. The method of claim 13, wherein  
2 the presenting an indication is performed by a first circuit including  
3 a first power source and  
4 at least one indicator, wherein the at least one indicator is operably  
5 coupled to the momentary switch and the first power source  
6 such that the at least one indicator  
7 presents an indication when the momentary switch is closed  
8 and  
9 does not present an indication when the momentary switch is  
10 not closed; and  
11 the preventing is performed by a second circuit including a second power  
12 source, wherein  
13 the second circuit is operably coupled to the momentary switch and the  
14 second power source such that the second circuit is  
15 closed when the momentary switch is closed and  
16 open when the second circuit is open and

17 the second circuit is capable of being operably coupled to circuitry of  
 18 equipment to which the gas fitting interlock apparatus is  
 19 capable of being operably coupled, such that when the  
 20 apparatus is operably coupled to the equipment and the second  
 21 circuit is operably coupled to the equipment circuitry, the  
 22 equipment is not capable of operating when the momentary  
 23 switch is open.

1 15. The method of claim 14, wherein the at least one indicator is an at least  
 2 one light-emitting diode.

1 16. The method of claim 14, wherein the momentary switch includes  
 2 a first contact by which the momentary switch is operably coupled to the at  
 3 least one indicator;  
 4 a second contact by which the momentary switch is operably coupled to the  
 5 first circuit voltage source;  
 6 a third contact by which the momentary switch is operably coupled to the  
 7 pedestal portion and the fitting support portion; and  
 8 a fourth contact by which the momentary switch is operably coupled to an  
 9 input/output interlock return, wherein the input/output interlock return  
 10 is operably coupled to the second circuit power source.

1 17. An apparatus comprising:  
 2 means for receiving a gas line into an interlock component, the interlock  
 3 component including a momentary switch;  
 4 means for tightening the interlock component to a tightness equal to or greater  
 5 than a predetermined tightness sufficient to clamp the gas line, the  
 6 tightness to which the interlock component is tightened enabling the  
 7 momentary switch to close;  
 8 means for presenting an indication when the momentary switch is closed; and  
 9 means for preventing gas from flowing through the gas line when the  
 10 momentary switch is open.